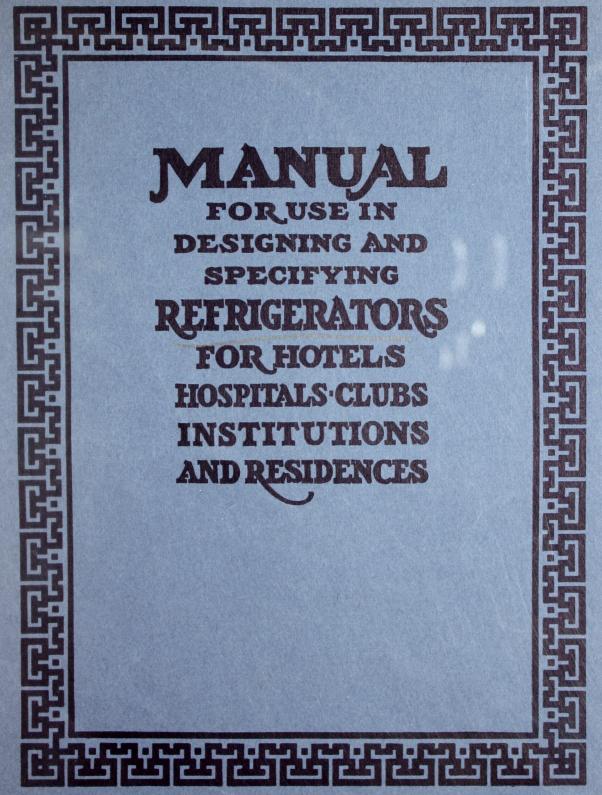
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FOREWORD

T is not the intention to eliminate competition by use of the information contained in this manual, but rather to equalize the competition in the award.

The following specifications and suggestions may be considered as covering the best practice in construction, arrangement and finish of the refrigerators for the uses intended and are submitted as a guide in laying out and specifying the construction of refrigerators for Hotels, Hospitals, Clubs, Institutions and Residences.



GENERAL

WHERE ice is used as the cooling agent, the ice compartment is either across the top or at the side, back or in the center of the storage space. The location of the ice compartment depends upon the size and shape of the refrigerator. Mechanical refrigeration has largely superseded ice as a cooling agent, especially where the refrigerator equipment consists of several units, in Hotels, Hospitals, Clubs and Institutions.

When the refrigerators are operated with refrigerating coils, the arrangement is similar to where ice is used as the refrigerating coils are often contained in compartments corresponding to the ice compartments; the alternate method is to place the refrigerating coils against the walls of the storage compartments. Little or no advantage is secured with overhead coil compartments, except where meats are to be aged, in which event an overhead compartment is particularly desirable to produce a circulation of air. Overhead coil compartments require a minimum refrigerator height of 10'-6" outside where the storage compartment below is to be entered. A total height of 11'-0" or even 12'-0" outside provides storage compartments of more convenient height, but 10'-6" outside is the minimum. Large storage refrigerators which are accessible through full-height entrance doors, should be 8'-0" high outside, where coils are applied to the side walls.

The smaller or service refrigerators in Hotels, Clubs and Institutions, should be placed on 3" sanitary cement platforms, which are finished with a cove to the floor of the building. These reach-in refrigerators should not exceed 6'-3" in height outside unless provided with an overhead ice or coil compartment, in which case the outside height should be from 8 to 9 feet.

In large storage refrigerators where these can be grouped and controlled by a common vestibule, the best results are obtained with economical operating expense.



MATERIALS

INSULATION

Compressed sheet cork has greater efficiency on given thickness than any other material used in refrigerator construction. It is impervious to dampness and entirely fireproof.

The approved construction of large storage refrigerators which are entered through full-height entrance doors, is four inches of sheet cork in two courses of 2'' thickness. Where temperatures below 25° F. are required, five to six inches insulation is necessary (two courses of 2'' and 3'' respectively, or three courses of 2'').

The insulation in storage refrigerators is applied as follows: The outer course is placed direct to the building walls (where same adjoin refrigerator, and are of tile or masonry), with ordinary Portland cement plaster. Where the adjacent building wall is of wood, the outer course of cork is nailed with roofing washers. The inner course of cork is plastered and cemented directly to the first course. Where no building walls exist, 2" x 2" studs are set 12" apart from the top to the bottom of the refrigerator, between which is placed the inside course of cork, the outer course being nailed to the outside of the studs and cemented to the inner course of cork.

The ceiling insulation of the same thickness is cemented or nailed to the building ceiling, as the case may be, or if the height of the refrigerator is less than the ceiling height of the building, it is then carried on 2" x 2" x $\frac{3}{16}$ " steel tees, painted to prevent rusting and supported on the side walls. These tees are spaced 12" on centers in which the lower course of cork is laid.

The floor insulation is placed directly on the building floor, which is first leveled with cement and covered with one course of roofing felt. This roofing felt is coated with hot pitch to receive the first layer of cork. The second layer of cork is laid also in pitch directly onto the first course, over which is laid another course of roofing felt and hot pitch. Both courses of felt are turned up on the side walls 6" to 12" and pitched water-tight.

The foregoing construction refers particularly to large refrigerators to be entered; for smaller refrigerators the usual construction is a frame of 2"x 2" or 2"x 3" strips sheathed on both sides with the space between filled with three inches of sheet cork in two thicknesses (to protect the joints) fitted tightly into the frame. Two courses of waterproof paper are applied to each side of the insulating material between that and the sheathing.



INTERIOR FINISH

WALLS AND CEILINGS

The interior finish of service and storage refrigerators may be of-

- (1) White glass,
- (2) Galvanized sheet iron unfinished,
- (3) "Atlas" stainless white cement,
- (4) Gray Portland cement.

White plate glass is the most sanitary and attractive interior finish for refrigerator work, exclusive of the 11/4" Solid Porcelain interior lining used in residence refrigerators.

White plate glass is used in thickness of $\frac{7}{16}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " and 1".

For the Storage Refrigerators in hotel and hospital work, especially those to be entered, $\frac{3}{4}$ " thickness is appropriate ($\frac{3}{4}$ " is sufficient for ordinary requirements).

In Service Refrigerators for hotel and hospital work white glass $\frac{5}{8}$ " thick is sufficient. White glass is applied to the walls and ceilings of the storage compartments in sheets up to $\frac{36}{9}$ " wide by the height of the room or the length of the ceiling. The corner and other joints are covered with half-oval moulding set in white cement.

Galvanized sheet iron is applied in full sheets carefully nailed with galvanized nails, and either left unfinished or treated to one coat of galvanic primer(to hold paint), two coats white metal primer and two coats odorless cuticle enamel. All galvanized sheets should be of genuine "Armco" Iron or "Toncan" Metal, free from pin-holes and specially adapted through rust-resisting and non-corroding properties to the requirements of refrigerator construction.

Either the interior linings of white glass or galvanized iron are applied directly against the interior wall of the refrigerator.

Cement, either white or gray, is applied in three coats directly against the sheet cork insulation or onto wire lath. In producing a white cement interior, the two interior coats are of gray cement and the final coat of white cement is carefully applied and troweled smooth, with corners well rounded, making a most attractive, practical and sanitary finish at comparatively low cost.



FLOORS

- (1) Vitreous white tile, with sanitary cove tile base,
- (2) Vitreous white tile, without sanitary base,
- (3) Portland cement,
- (4) Galvanized sheet iron.

Vitreous white tile (preferably $\frac{13}{16}$ " round) laid in cement is the most acceptable floor finish. It is laid either straight against the side wall finish or with a white glazed tile cove supporting the wall finish.

Gray Portland cement provides a suitable and durable floor surface, but is not as attractive or as cleanly as tile.

Galvanized sheet iron (gauge 18 or 20) is used for certain types of refrigerators, especially where the interior finish is of metal, such as fish and oyster storage refrigerators, etc.

The ice or coil compartment in storage and service refrigerators as well as the interiors of Milk, Ice Cream, Cracked Ice and Fish Refrigerators are lined throughout as follows:

- (1) Monel metal,
- (2) Plain or tinned copper,
- (3) Galvanized sheet iron.

EXTERIOR FINISH

- (1) The exterior finish of Storage Refrigerators is either gray or white cement applied to wire lath, attached to rough refrigerator construction, or directly to the outside course of sheet cork.
- (2) Glazed tile is applied to the exterior of Storage Refrigerators in the same manner as the Portland cement, with the refrigerator doors and casings of cabinet finish.
- (3) The exterior finish of Service Refrigerators, where this is not required to match adjacent trim, is of brown ash, treated to one application of paste filler, well rubbed in, and three coats of spar varnish. The exterior finish may also be of any other desirable wood to match the surrounding woodwork of the building, such as oak (either plain or quarter-sawed, etc). If the adjacent trim is white enameled and the exterior finish of the refrigerator is to match, birch is suggested as the most practical material to receive the white enamel finish; cherry is slightly better, but more costly.



Where the exterior of the refrigerator is desired in white enamel, the refrigerator should be installed finished in three coats of flat white, with remainder of finish furnished and applied after all work is complete, since it is practically impossible to handle and install finished enameled work without soiling.

(4) The tops and sides of refrigerators for milk, ice cream, fish, etc., are finished either with monel metal or galvanized sheet iron.

Where exterior surfaces are of considerable area, such as in large Storage Refrigerators, especially those of cork construction, gray or white Portland cement provides an inexpensive, jointless, hard, sanitary finish. For this can be substituted any similar finish that may be used on adjoining walls of building, such as white tile, rough plaster, etc. For low refrigerators, such as Ice Cream, Milk and Cream, Cracked Ice, Fish, etc., where constant cleaning of the exterior is required, the entire exterior should be of monel metal or galvanized sheet iron; top constructed of gauge 10, sides and ends etc., gauge 22.

MISCELLANEOUS

All drawers and pans which are over three inches deep, are usually fitted with brass roller-bearing, self-sustaining runways; shallow pans are operated on angle iron slides. All pans and drawers are constructed throughout of galvanized sheet iron.

All Ice Cream and Milk Refrigerators have lift-swing hinge-handles on small covers, by which arrangement access is gained to contents of these refrigerators and at the same time the removal of covers from refrigerators is precluded. These Ice Cream and Milk Refrigerators are furnished with porcelain-lined jars contained in watertight drums. All glacé frames for ice cream in fancy forms are counterweighted, as are all top covers where frequent opening is required, as in fish, cracked ice refrigerators, etc. These counterweights are hung on double cords, safety pattern. All of the interior fittings are removable for cleansing, etc.

The floors of all compartments in Storage as well as Service Refrigerators are built to drain either to a trap in the floor, or to discharge through the side wall of the refrigerator at floor level by means of flush self-sealing traps.

All hardware is of cast brass, highly polished, or other material, or finished as required, and is of the heaviest pattern and most approved type.

Where display features are desired, glass panels are provided either in the refrigerator doors or elsewhere. The glass is in three courses, each of which



is set in piano felt to avoid condensation. Plate glass is preferred and in best installations inner and outer lights are $\frac{1}{4}$ " thick to avoid breakage, while center light is $\frac{1}{8}$ " thick.

In general, the interior and exterior finish to be recommended is governed largely by conditions, such as the type and purpose of the refrigerator, its location in and the nature of the building, appropriation available, etc. However, in a general way, refrigerator installations may be classified as follows:

HOTELS AND CLUBS

Sheet cork construction, cement or tile exterior, white cement and galvanized iron interiors, white tile or cement floors, galvanized steel interior fittings. Exterior finish of service refrigerators to be of ash or oak, (preferably ash which stands the climatic changes better than oak.)

REFRIGERATORS FOR ICE STORAGE, GARBAGE, ETC.

Refrigerators used in hotels and institutions for storing ice and garbage in cans, irrespective of the finish of the other refrigerators, have interiors of galvanized sheet iron, with floors of either cement or galvanized sheet iron, protected by hardwood floor-racks.

Refrigerators for storing oysters in barrels or other rough bulk supplies are generally of similar interior finish.





Usual Equipment of Refrigerators in Hotels and Clubs

BASEMENT FLOOR

Between Butcher's Room and Store Room there should be located large refrigerators for the storage of the following supplies:

Fresh meats-34°

Poultry and game-15°

Smoked meats—36°

Oysters—34°

Milk, butter and eggs-36°

Cheese—38°

Hors d'oeuvre-36°

Fruits and vegetables—40°

The foregoing refrigerators should be grouped and controlled by one or two vestibules. There should also be a refrigerator for garbage, as well as ice storage, the latter adjacent to the ice making tank.

KITCHEN FLOOR

Cook's Vegetable Refrigerator—36°

Cut Meat Refrigerator—34°

Consommé Refrigerator-20°

Butcher's Refrigerator—34°

Garde Manger Refrigerator—38°

Fish Refrigerator—32°

Ice Cream Refrigerator—0°

Serving Pantry Refrigerator—38°

Helps' Pantry Refrigerator—38°

Pastry Refrigerator—36°

Milk and Cream Refrigerator—34°

Cold Plate Refrigerator—32°

(Under Serving Pantry and Pastry Room Counters)

Oyster Refrigerator—38°

Baker's Refrigerator—36°

A Banquet Pantry Refrigerator will generally be required with, perhaps, refrigerator facilities in connection with private dining rooms, also Cracked Ice Refrigerators, etc.



The foregoing list will cover the requirements of a modern hotel in any of the large Cities; omissions from this list may be made with judgment in laying out equipment for smaller hotels, whose facilities may be taken care of with a three-compartment General Storage Refrigerator, cooled by an overhead ice compartment, with the storage compartments accessible from possibly three sides.

HOSPITALS

The same specifications for Storage Refrigerators as Hotels. Particular attention should be given to all features to provide absolute sanitation. Small but perfect refrigerators are also required in the various Diet Kitchens located throughout the building, which should be constructed preferably with an interior lining of 1½" solid porcelain ware. Large hospitals generally require Mortuary Refrigerators with a capacity of from two up to twelve or fifteen subjects.

RESIDENCES

The exterior is ordinarily of wood, cabinet finish, either to match surrounding woodwork of building or of ash, varnished. Properly seasoned and carefully manufactured woodwork constitutes the best form of exterior finish from the viewpoint of durability and tight-fitting doors. However, for an ultra-perfect and expensive finish, used occasionally for fine residences, etc., the exterior is of white glass, with the doors and openings finished in monel metal bands, with accompanying hardware of nickeled silver. This finish requires a great amount of exceedingly accurate labor to secure perfect results and the cost is very high.

A type of refrigerator particularly adapted for this requirement is one constructed with an interior lining of solid porcelain ware in the ice as well as the food compartments.

In residences wherever possible, refrigerators using ice should be placed to use outside icing doors, which openings can be employed in cold weather to operate the refrigerator without ice. This method also keeps the ice man out of the house.



In Hotel, Hospital, Club and Institutional refrigerator work, it is suggested that specifications in standard form be incorporated as follows, and their use will be found quite simple by making reference to the paragraph numbers

GENERAL CONDITIONS

INSTALLATION

- All refrigerators herein described shall be built by Special Refrigerator Builders, and shall be designed for use with mechanical refrigeration. The refrigerating machinery, together with supply and return mains and brine coils, are to be furnished and installed by other contractors, with whom this contractor shall work in entire harmony.
- These refrigerators shall embody the most advanced ideas in construction, arrangement and finish, and shall represent in every way the best practice suitable for the uses of a modern......
- 3 They shall be delivered and set in place complete in the spaces prepared for them, as shown, noted or as may be designated at such times and in such manner as to facilitate the installation of the refrigerating coils, plumbing connections, electrical features and other work adjacent.
- 4 This contractor shall exercise due care in the erection of this contract so as to avoid any injury to existing work, and shall pay for and make good any damage done the work of other contractors.

REFERENCES

5 All bidders must be able to refer to work of similar character manufactured and installed by them, as special attention will be given to the experience, reputation and manufacturing facilities of the bidders.

GUARANTEE

6 This work shall be erected by competent workmen only and guaranteed in writing against inherent defects for a period of two years.

DRAWINGS

- The contractor to whom the contract is awarded shall submit to the architects for approval, complete shop details showing each refrigerator in plan and elevation, also in section where necessary, illustrating in clearest detail, the arrangement of doors, compartments, covers, design of hardware, mortuary slides, etc., and method of supporting shelves, meat-racks, etc.
- 8 The contractor shall secure measurements of all spaces for refrigerators, as well as for all electrical and drainage outlets, etc., at the site and show same on the detail shop drawings. He shall construct his work to suit these conditions.

DRILLING HOLES

9 All the holes necessary for drainage pipes, electric light tubes and sockets, inlets and outlets for coils, etc., shall be provided under this contract.



DRAINS

All refrigerators shall be provided with drains, properly trapped and carried through refrigerators at points nearest to building drainage. All connections for drainage and electrical outlets shall be made by other contractors.

MATERIALS AND WORKMANSHIP

All materials and workmanship required for the execution of this contract shall be the very best of their several kinds, all work being performed with thoroughness and skill and to the complete satisfaction of the architects.

SCHEDULE

- The following schedule shows approximate sizes of the refrigerators required: ("Give list of refrigerators with sizes")
- All storage refrigerators shall be built on rough floor of building. All service, ice cream, fish and cracked ice refrigerators shall be built on 3" cement pedestals, furnished by other contractors and finished with cove to floor of building.

DOORS, JAMBS, ETC.

- All doors and drawer-fronts shall be of heavy over-lapping type; shall be insulated same as walls, fitted with beveled jambs and double rabbeted. All jambs shall be of absolutely clear white spruce, thoroughly seasoned and kiln-dried, well worked and carefully finished with two coats of pure gum shellac.
- All full-height entrance doors shall be arranged with cross-panels, having sills protected by heavy galvanized boiler plates and angles. All service doors shall have exterior faces flush, without panels.
- 16 All display and door panels where required, shall be of triple selected polished plate glass, securely set in piano felt to avoid condensation.

EXTERIOR FINISH

(Storage Refrigerators)

- All exposed woodwork of exterior doors, together with casings of same, shall be of selected ash, thoroughly seasoned and kiln-dried, filled natural and varnished three coats best quality spar varnish. All exposed woodwork, together with casings of interior doors, shall be of No. 1 white pine thoroughly seasoned and kiln-dried, and finished in three coats of lead and oil paint. Remainder of exposed exterior of refrigerators shall be finished by this contractor in best quality Portland cement plaster. (Service Refrigerators)
- All exposed exterior woodwork shall be of thoroughly seasoned and kiln-dried ash, carefully worked and finished, filled natural and varnished three coats best quality spar varnish.
 - All exterior parts not exposed to view shall be of thoroughly seasoned and kiln-dried flooring finished with two coats of best mineral paint.
 - (Ice Cream, Fish and Cracked Ice Refrigerators)
- Exposed exterior shall be finished in galvanized sheet iron, strongly screwed, braced and soldered, having edges of openings faced with angles; top frames gauge 14, covers gauge 10, exposed fronts and ends gauge 22.

 —OR—
- Exposed exterior shall be finished in polished monel metal, strongly screwed, braced and soldered, having edges of opening faced with angles; top frame gauge 14, cover gauge 10, exposed front and ends gauge 22.



HARDWARE

- 21 All hardware shall be of standard pattern throughout, of the heaviest type and approved design, and shall be of solid cast brass, highly polished.
- All full-height entrance doors shall be hung on three T-hinges weighing not less than 16½ lbs. per set. All smaller doors shall be hung on two hinges weighing not less than $5\frac{1}{2}$ lbs. per pair. All hinges shall be so designed that when doors stand at right angle to opening the same is unobstructed. All pivotal members of hinges shall be fitted with concealed case-hardened steel washers.
- All full-height entrance doors shall be fitted with levers, provided with flange protecting edge of door, and having inside handles, releasing levers from within refrigerator, and shall be provided with vertical-acting hasps.
- 24 All smaller doors shall be fitted with special self-closing levers.
- 25 All doors, drawers, covers, etc., shall be provided with locking-rods, locking-plates, padlock-eyes and padlocks, all to be of the same material and finish as the other hardware, keyed and masterkeyed.

INTERIOR FINISH

(Storage Refrigerators)

- All walls, together with ceilings, shall be finished throughout with cement plaster $\frac{3}{4}$ " in thickness, applied in three coats, the first 1/4" thick, of gray Portland cement, rough-scratched. Second coat shall be 1/4" thick, of special "Atlas" stainless white cement, rough-scratched; final coat shall be 1/4" thick, of special "Atlas" stainless white cement, troweled smooth, having all corners rounded and finished with cove to floor. Floors shall be of 2" to 3" thickness and of best gray Portland cement, troweled smooth, with proper slant for drainage.
- 27 Interior faces of doors shall be finished in gauge 22 galvanized sheet iron. (Service Refrigerators)
- 28 All walls, together with ceilings, shall be finished throughout in gauge 24 galvanized sheet iron, well nailed and braced. Floors shall be of gauge 20 galvanized sheet iron, well nailed and braced, and soldered watertight.
 - (Ice Cream, Fish and Cracked Ice Refrigerators)
- All walls, together with floors and inside of covers, shall be finished throughout in gauge 18 galvanized sheet iron, well nailed and braced, and soldered watertight as required.
- 30 All floors finished in cement shall be laid with proper slant for drainage, and shall be provided with gutters along walls carrying refrigerating coils having proper pitch
- All floors finished in galvanized iron shall be laid with proper slant for drainage, and shall be provided with gutters along walls carrying refrigerating coils having proper pitch for draining. Gutters shall be lined throughout bottoms in 16 oz. cold rolled copper, well nailed and braced, and soldered watertight.

INTERIOR FITTINGS

32 All refrigerators shall be completely fitted with removable shelves, meat racks and hooks, bottle racks, mortuary slides, drawers, pans, jars, cans, glace frames, floorracks, etc., as specified in detail, and which shall be of the following construction and



- 33 SHELVES of all storage refrigerators accessible through full-height entrance doors shall be constructed of gauge 16 galvanized sheet iron, with turn-up at back and half-round gutter along front, all rigidly supported on removable standards, constructed of angle iron 1½" x 1¼" x 1½".
- 34 SHELVES of all service refrigerators, shall be constructed of gauge 16 galvanized sheet iron, with turn-up at back and half-round gutter along front, all rigidly supported on galvanized angle iron frames.
- MEAT RACKS shall be constructed of 2" x 3/8" wrought steel bars, secured by nickel-plated brass bolts to 2" x 1/4" T-iron uprights. Meat racks to be four bars high, and shall be provided with wrought iron lift-off bar hooks forged from 1/2" iron.
- 36 Uprights of meat racks shall be securely imbedded in floor and rigidly secured at top with sockets screwed to grounds strongly imbedded in ceiling insulation.
- 37 All shelves, together with standards and angles, meat racks, hooks and sockets, shall be heavily galvanized after fabrication.
- 38 BOTTLE RACKS shall be constructed of 3/4" x 11/2" triangular ash strips, dressed smooth and carefully oiled, spaced to receive all size bottles and strongly screwed to cross-bars.
- MORTUARY SLIDES shall contain removable watertight trays constructed of gauge 24 galvanized sheet steel, dish-shaped at ends and sides, with rims rounded and reinforced by 1" seamless tubing; reinforcement projecting beyond and across ends forming handles by which the trays may be carried. The slides shall run on special roller-bearing supports so arranged that in carrying the subject the tray may be easily drawn its full length from the refrigerator and held rigidly in a horizontal position without any other support. The slides shall be so arranged that they may be readily removed from refrigerator for cleansing. All trays, slides and supports for same, shall be entirely of metal, of the heaviest and most substantial construction throughout, all heavily galvanized after fabrication. Trays to be 6'-6" long over-
- 40 DRAWERS shall have frames of heavy galvanized steel, strongly riveted and braced, fitted with removable watertight galvanized sheet iron pans, and sliding on special roller-bearing runways, so constructed as to maintain drawers in a horizontal position until entirely withdrawn from refrigerators.
- PANS for fish shall be constructed of heavy galvanized sheet iron, strongly riveted, braced and bound, soldered watertight and provided with drainage tubes where required, and sliding on special self-sustaining roller-bearing runways described above. Pans protected by galvanized iron shields whereby drippings from fish in cracked ice is discharged without coming in contact with contents of other pans.
- PANS for pastry and ice cream forms shall be constructed of heavy galvanized sheet iron, strongly riveted, braced and bound, soldered watertight, and sliding on galvanized angle iron runways.
- JARS for ice cream and consommé shall be round and constructed of extra heavy cast iron, porcelain lined, and designed with inside flange around top, affording convenient grip by which the jar can be lifted.



- CANS for sherbet shall be half round in shape and built of gauge 14 sheet iron, heavily coated with pure block tin.
- 45 All jars and cans shall be contained in heavy galvanized iron frames insuring stability of jars and cans.
- 46 All covers providing access to jars and cans shall be fitted with patented lift-swing hinge-handles of solid cast 18% Liberty silver, highly polished, and of the necessary substantial pattern to operate covers without lateral friction. By this arrangement access is gained to contents of jars and cans and at the same time the removal of covers from refrigerator is precluded.
- 47 GLACÉ FRAMES shall be constructed of heavy galvanized steel bands, faced on three sides with galvanized sheet iron, and arranged with a sufficient quantity of draw-out shelves, all being contained in watertight, heavy galvanized sheet iron tanks, and attached with copper chains to lead counterweights in cranes. Cranes shall be constructed of 3" extra heavy nickel-plated brass pipe with elbows and flanges, all arranged for the convenient storing and serving of fancy forms of ice cream and ices.
- 48 FLOOR RACKS shall be constructed of $1\frac{1}{4}$ " x $1\frac{1}{4}$ " clear white ash strips, spaced $1\frac{1}{4}$ ", all securely wired so as to conform to pitch of floor and lie flat.

GALVANIZED SHEET IRON

49 All galvanized sheets shall be of the gauges specified and of first quality Armco Iron or Toncan Metal, free from pin-holes, and specially adapted through rust-resisting and non-corroding properties to the requirements of refrigerator construction.

INSULATION

(Storage Refrigerators)

- All walls, together with ceilings and partitions, shall be constructed of four inches sheet cork in two courses of two thickness, all corner-joints to be interlocking, all other joints to be carefully broken, to which shall be applied the interior finish specified above.
- Cork shall be applied to surrounding walls of building, where same exist, with Portland cement, approximately $\frac{1}{2}$ " thick, which cement in similar thickness is also to be used in applying the inner courses of cork to the outer courses in walls, partitions and ceilings.
- Unless ceiling insulation can be applied direct to ceiling of building, lower course of same shall be carried on $2'' \times 2'' \times \frac{3}{16}''$ tees, spaced 12'' on centers, and supported on walls and partitions. All tees shall be free from rust, well cleaned and heavily coated with red lead and oil.
- FLOORS (Storage Refrigerators) shall be constructed as follows: A course of two inch sheet cork to be laid on rough floor of building, having all joints broken and laid in hot asphalt, then a second course of two inch sheet cork running in the opposite direction, having all joints broken and laid in hot asphalt, to which shall be applied a course of roofing felt, having all edges turned up 12" against walls and thoroughly waterproofed with hot asphalt throughout, on top of which is laid finished floor as specified above.



(Service, Fish and Cracked Ice Refrigerators)

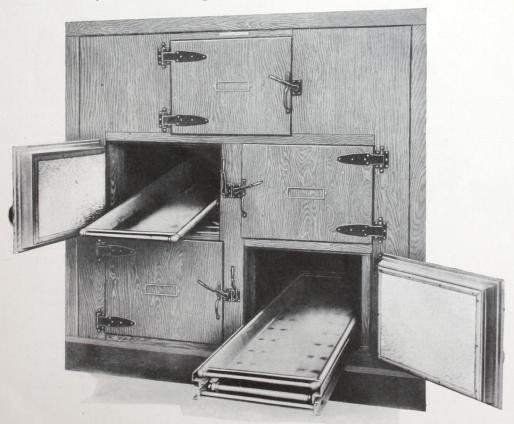
- 54 All walls, together with floors and ceilings, shall be constructed of one course $\frac{7}{8}$ " tongued and grooved boards, then two courses waterproof insulating paper, then three inches sheet cork in two courses of $\frac{1}{2}$ " thickness, all joints being broken to which is applied the interior finish specified above.
- 55 All corners and sectional joints shall be interlocking and airtight. All insulating paper shall be well lapped and free from tears.

(Ice Cream Refrigerators)

56 All walls, together with floors and covers shall be constructed of one course $\frac{7}{8}$ " tongued and grooved boards, then two courses waterproof insulating paper, then five inches sheet cork in two courses of three inch and two inch respectively, all joints being broken, to which is applied the galvanized iron interior finish.

CORK

57 All cork shall be pure cork, that made in sheets weighing not over sixteen pounds per cubic foot, and able to withstand immersion in water or boiling at atmospheric pressure for three hours without disintegrating or expanding more than two per cent linear expansion in either length, breadth or thickness.



Four-compartment Jewett Mortuary Refrigerator with overhead compartment for ice or mechanical refrigeration.



Refrigerators adapted particularly for use in connection with diet kitchens, as well as residences, should have an interior lining of 1¼" thick solid porcelain ware in the ice, as well as the food compartment. This type of refrigerator may be specified as follows:

DIMENSIONS

2 GENERAL

All materials and workmanship shall be the best of their several kinds, made and installed complete, ready for the reception of refrigerating coils and brine tanks, or ice, as the case may be.

All exposed exterior woodwork shall be of thoroughly seasoned and kiln-dried ash, carefully worked and finished, filled natural and varnished three coats best quality spar varnish. All exterior parts not exposed to view shall be of thoroughly seasoned and kiln-dried yellow pine ceiling, oiled.

-OR-

- 4 All exposed exterior woodwork shall exactly match in material and finish and fully equal in workmanship surrounding woodwork of building (except where this is white enamel, in which case refrigerator (s) will be finished in three coats of flat white.) All exterior parts not exposed to view shall be of thoroughly seasoned and kiln-dried yellow pine flooring, oiled.
- Entire exposed exteriors of fronts and ends shall be finished in white porcelain fused on sheet steel at a temperature not less than 1600° F., doors and door openings being bound by 2-34" x ½" Liberty silver strips, accurately fitted and secured. Exposed corners shall be protected by Liberty silver angles and Liberty silver bands shall be used to cover the joints where refrigerator abuts walls or adjacent fixtures. Watertight pan of gauge 20 galvanized sheet iron shall be inserted between refrigerator floor and cement pedestal, flashed up at sides and turned into walls.
- 6 Entire interior of refrigerators, coil or ice compartments, as well as food compartments, shall consist of SOLID PORCELAIN (snow-white earthen ware, glazed and fired), moulded in one piece 1¼" thick, and having all corners carefully rounded.
- 7 All porcelain compartments shall consist of a single unit, extending the full height of refrigerator; placing small units one above the other will not be permitted.
- 8 Coil compartments shall be of SOLID PORCELAIN, same as food compartments, and fitted with the necessary cold air ducts and warm air flues.
- Ice compartments shall be of SOLID PORCELAIN, same as food compartments, the ice being sustained in removable heavy galvanized metal holder. Ice holder is uniformly spaced from the solid porcelain side walls, allowing space on all sides for the free circulation of cold air.
- All doors shall be of heavy overlapping type; shall be insulated same as walls, fitted with beveled jambs, and double rabbeted, and shall have inside faces finished in $\frac{7}{16}$ white plate glass in full sheets. Exterior faces of doors shall be flat, without panels.
- All jambs shall be of thoroughly seasoned and absolutely clear white spruce, well worked and carefully finished with two coats of pure gum shellac.



- All hardware shall be of special design for this class of work, and shall be of solid cast brass, highly polished. All pivotal members of hinges shall be fitted with concealed case-hardened steel washers. All doors to be fitted with special self-closing levers.
- 13 All storage compartments shall be fitted with an ample supply of removable shelves constructed of $\frac{1}{4}$ rod, spaced $\frac{3}{4}$ and spot-welded to $\frac{5}{16}$ cross-bars. Front finished with $\frac{1}{2}$ angle; all heavily coated with pure block tin after fabrication, and supported by lugs cast integrally with the porcelain interior.
- 14 Refrigerators shall be provided with drains, properly trapped and carried through bottom of refrigerators.

15 INSULATION

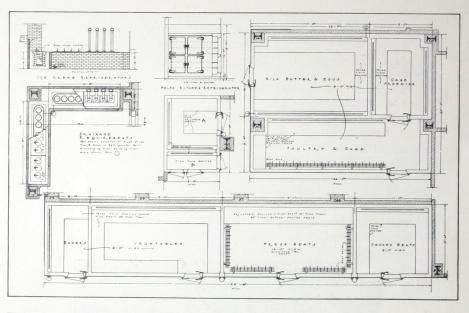
All walls, together with floors and ceilings, shall be constructed of one course $\frac{7}{8}$ " tongued and grooved boards, then two courses waterproof insulating paper, then one inch sheet cork, then two courses waterproof insulating paper, then one course $\frac{7}{8}$ " tongued and grooved boards, then two courses waterproof insulating paper then $1\frac{1}{4}$ " pure cork, to which is applied the $1\frac{1}{4}$ " solid porcelain interior lining,

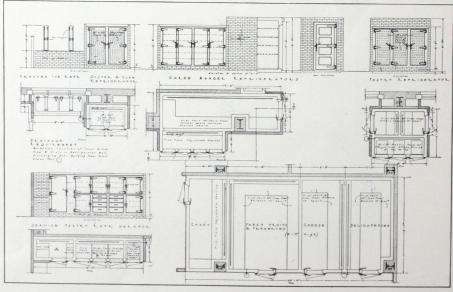
16 All corners and sectional joints shall be interlocking and airtight. All insulating paper to be well lapped and free from tears.



THE "Jewett" solid porcelain refrigerator is really sanitary. Since the interior of the refrigerator consists of a single piece of snow-white crockery, it can be wiped germlessly clean, quickly and easily.

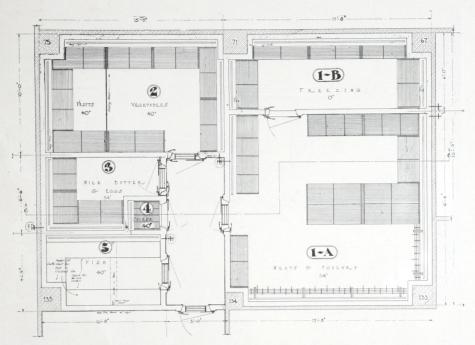




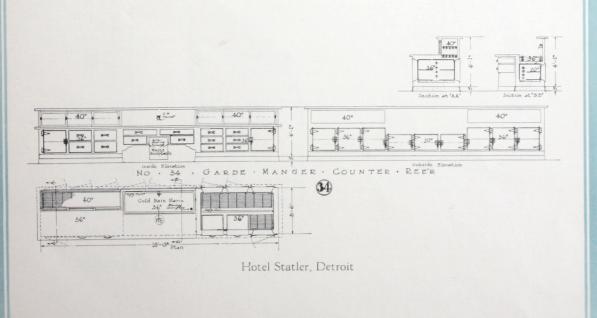


Some of the Refrigerators designed and built for Hotel Commodore, New York. This installation adequately serves the different kitchens and pantries on the several floors, and is commended for consistent placing and lay-out as well as superior construction for the delivery of wholesome cold storage.

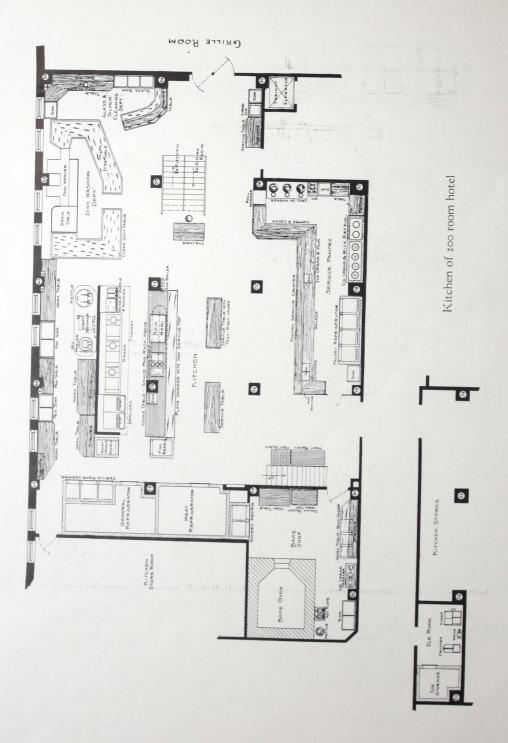




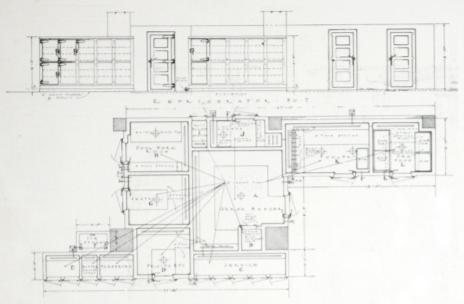
The large refrigerator for storage, in Hotel Statler, Detroit, with vestibuled entrance to meats and poultry: the freezing chamber; fish, milk, butter, eggs, cheese, vegetables, fruits.







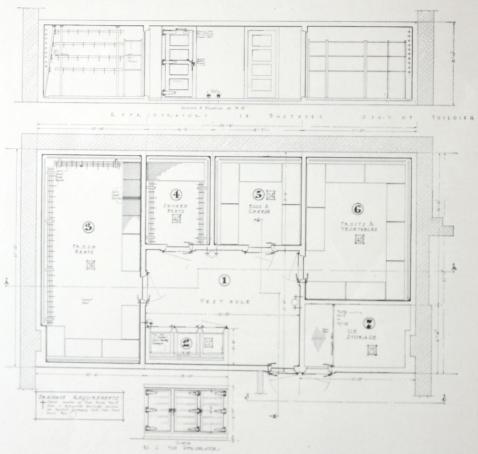




THE GARDE MANGER REFRIGERATOR in The Drake Chicago is unique in arrangement as shown by the above illustration. It will be noted that Compartment A, being the main compartment, opens into the Butcher Shop, as well as Compartment K, Poultry Storage, and Compartment L, Fish Storage. These three compartments are very accessible for the butchers preparing this food for the fire. It will also be noted that Compartment L, Sea Food Compartment, contains slate tubs in which the fish is kept in cracked ice. There are also shelves over these tubs. In the poultry compartment is located a sink to prepare the poultry before it is handled by the butcher. In Compartment A, General Storage Garde Manger, will be noted a small Compartment B. This compartment is one of Steward Muller's hobbies and is called a sokkle box (a sokkle is a fancy form cut out of a block of ice in all sorts of shapes such as dishes, baskets, swans, etc., on the order of fancy candy set pieces). In this compartment coils take the place of shelves, as this compartment is kept below freezing. Compartment C is for Garde Manger quick service. Compartment D is a fruit storage for the fruit pantry service, while Compartment E is for the storage of preserves and butter, etc. Compartments H and G face the bake shop and it will be noted that in Compartment H there is a marble top where the baker prepares his pastry. Compartments I and J are for the storage of bread, etc.

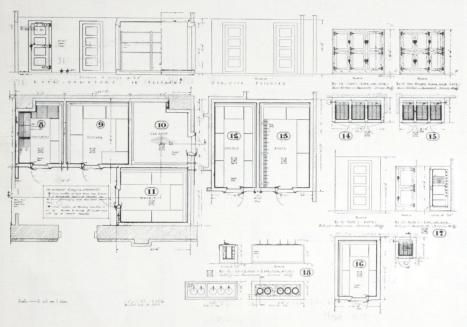
OTHER REFRIGERATION: There are thirty-five refrigerators in The Drake. The General Storage is located opposite the storeroom and has a vestibule running through the middle giving access to nine compartments as follows: Cream storage, butter and eggs storage, poultry storage, smoked meats, freezing room, fruits, vegetables, meats, and lobster and sea food. The vestibule of this refrigerator is wide enough for two trucks to pass The Oyster Refrigerator No. 3 is for the storage of oysters in without difficulty bulk, and service compartments for oysters on the half shell, as well as prepared oyster and clam cocktails. A banquet of three thousand people can be handled from this refrigerator with the greatest ease. Back of this refrigerator are two compartments for the storage of soft drinks. These refrigerators face the soft drink bar. Refrigerator No. 2 is for the storage of cheese and delicacies. The shelves in this refrigerator are extra heavy in order to support the great weight of the contents. There are three service pantry refrigerators up on the mezzanine floor. In each one of these in the lower left hand compartment there is a cracked ice container attached to the door where may be kept cracked ice for either room service or dining room service. Butter is also kept in each of these three refrigerators in a compartment containing shallow trays. There is a fur storage refrigerator up on the third floor where the guests may store their furs while stopping at the hotel.



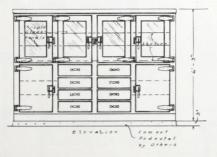


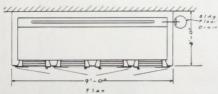
Plan of main refrigerators of Municipal Contagious Disease Hospital, Chicago, and typical of the most sanitary refrigeration that modern science and efficient workmanship, combined with selected materials has produced. The space is 20°x36°.





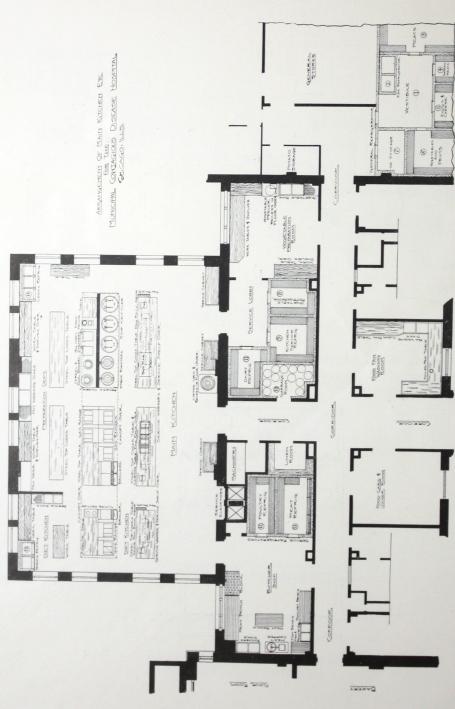
Refrigerators built for kitchen, diet kitchens, pantries, bakeshop, butcher shop, and garbage room of Municipal Contagious Disease Hospital, Chicago. (See plan of main kitchen for location of most of these.)





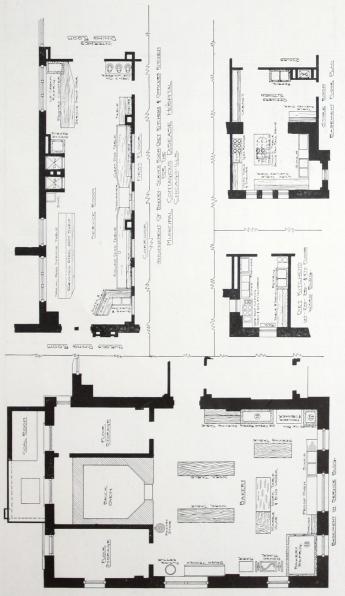
Counter display refrigerator, Coffee Shop, Hotel Sinton, Cincinnati





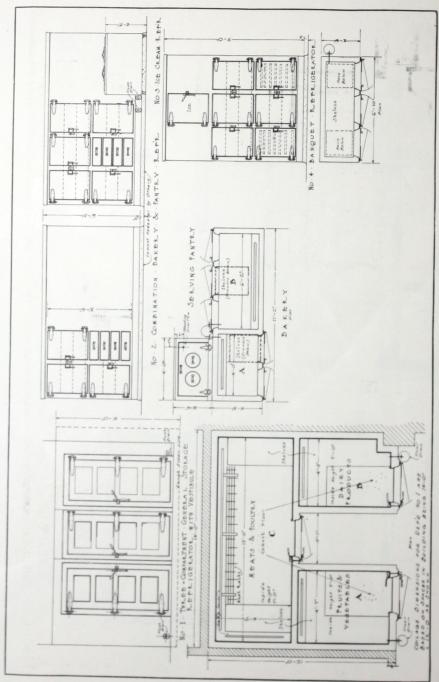
Main kitchen, the Municipal Contagious Disease Hospital, Chicago, 64'x42'; the corridor between bakeshop and receiving room The refrigerators are keyed to correspond with detail refrigerator plans. 116 feet long.





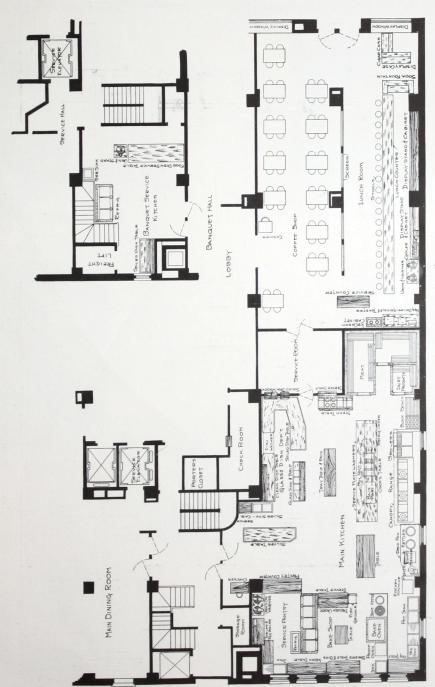
BAKESHOP of Municipal Contagious Disease Hospital. Location of this bakeshop to the kitchen shown on kitchen plan printed above. . . SERVICE ROOM with dumb waiter elevator connection to kitchen below, showing location of internes' and nurses' dining rooms; corridor in front of service room and dining rooms a promenade extending along rim to all five units. . . .Typical plan of DIET KITCHENS on first, second, third and fourth floors of ward buildings. . . OFFICERS' KITCHEN basement floor.





Refrigerator layout for storeroom, kitchen, pantry and bakeshop for 150 room hotel.





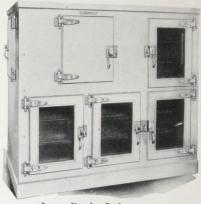
Kitchen layout for 150 room hotel. (For refrigerator details see page 26.)



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Jewett Garde-Manger Counter Hotel Statler, Detroit



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Jewett 8-Door Service Refrigerator



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